

Pedestrian spaces of historical center of st. petersburg: problems and future development

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Abstract. The emphasis is made on the specificity of pedestrian zones development in the historical center, most of the focus is on their role in the identification of unique architectural and landscape resources and the possibility of their forming in a residential zone on the intra-quarter territories. The factors, influencing the use of the historical and cultural potential of the central part of St. Petersburg in the creation of pedestrian zones, are revealed. It is noted that the optimization of pedestrian traffic, especially the organization of automobile traffic-free zones, can affect a number of indicators of the urban environment, these indicators are considered. The exceptional role of the Neva embankments in the system of urban highways is revealed. The intra-quarter territories of the historical center of St. Petersburg are analyzed from the point of view of the possibility of creating pedestrian zones in them. Sanitary and hygienic qualities, recreational opportunities, commercial attractiveness of intra-quarter pedestrian zones are considered. Suggestions on the development of pedestrian zones for the appropriate purpose are presented.

1. Introduction

Majestic landscapes, an abundance of historical monuments and cultural institutions of St. Petersburg city center draws our attention. It is saturated with objects of social infrastructure. A unique potential has been accumulated, but it is not being used to the full extent. The life of the historical center is complicated by the influence of a number of factors:

- the urban nucleus is cut by the branches of the Neva delta, and the number of bridges is small, and it hinders the movement of both transport and pedestrians.
- filling the city with cars reached a peak. In 2016, there were 1665300 motor vehicles in St. Petersburg (i.e. the relative saturation is greater than the Moscow one) [1],
- all of the existing and promising traffic diagrams are designed for a traffic congestion of the city center,
- the density of the street network in the historical center of St. Petersburg is inferior to European and many Russian cities, and it leads to extension of communications and increasing the traffic load.

In St. Petersburg, people just begin to think about the conditions of the movement of pedestrians, while in many foreign metropolises active measures are being taken to humanize the urban environment, to expand the possibility of comfortable movement and relax. Optimizing the movement



of pedestrians, especially the organization of traffic-free zones, can affect a number of indicators of the urban environment:

- Economic indicators. Obviously, the efficiency of any city facility depends on the level of its connections with residents. The study “Living cities: on the way to the pedestrian world” showed that it is a good idea to turn an ordinary street into a pedestrian street, as in this case sales in its retail outlets increase by 170% [2]. It would be interesting to determine what financial response a wider exposure of unique city panoramas, attracting from everywhere in St. Petersburg a lot of tourists, will draw.
- Sanitary and hygienic indicators. Motor transport is the source of 70-80 percent of pollutants entering the atmosphere in St. Petersburg. 40 percent of this amount accounts for the main highways of the historical center of St. Petersburg (Nevsky Prospect, Sadovaya Street, Izmailovsky Ave, Fontanka Embankment) [3]. In areas where there is no access of vehicles, air pollution with exhaust fumes and noise level are reduced. This is especially important if the aim is to create conditions for recreation.
- Safety of staying in an urban environment. In pedestrian areas, the probability of contact with moving cars is excluded, and it reduces traumatism and negative psychological impact.

The “Concept for the development of pedestrian areas of the historical center of St. Petersburg” developed in 2004 and in restated 2012 [3], established the main tasks of the forthcoming reforms:

- providing comfortable and safe conditions for pedestrian traffic;
- improving the environmental performance of the urban environment;
- increasing the attractiveness of these areas for pedestrian flows.

Taking into account the above-mentioned tasks, we will outline the main functional directions for increasing the attractiveness of the territories.

2. Identification of architectural and artistic merits of urban landscapes of the historical center

The idea that the main potential for increasing attractiveness is architectural and town-planning specificity was clear to the rulers of the city for a while. Deputy. chairman of the city planning and architecture L. Kanunnikova notes: “Since the 90's we have been thinking that in St. Petersburg, every yard, street and pedestrian zone should have its own face” [4]. The traditional look of the city was a model for urban planners, who previously worked there. The Palace Square, occupying 5.4 hectares in the heart of St. Petersburg (by comparison - Red Square in Moscow - 2.3 hectares), has been a pedestrian zone for a long time. In 1977, reconstructive works were carried out here, decorative paving was made from diabase stone blocks, pillars of lanterns were recreated in historical forms [5].

Nowadays, more and more attention is attracted to the panoramas of the Neva banks, the potential of which is only partially revealed. Problems are associated with the exceptional role of the Neva embankments in the urban highway system. Nowadays intense high-speed traffic flows cut off pedestrians for many kilometers from unique landscapes. Fortunately, on the banks of the Neva there are several sites, from where the residents and tourists can admire the wonderful panoramas (Figure 1).



Figure 1. Boulevard on the Admiralteyskaya Embankment.

These sites are a legacy of the past, which developed in the process of reconstruction. In the Peter and Paul Fortress, in addition to the pier near the Nevsky Gate (1784-1787, architect N.A. Lvov), in recent years a special gallery has been installed on the roof of Naryshkin's bastion. On the Spit of Vasilievsky Island (1805-1810, architect Thomas de Thomon), magnificent Birzhevoy Skver was created in 1925 by architect L.A. Ilin. The boulevard on the Admiralteyskaya Embankment, which was destroyed in 1875 underwent several reconstructions. Lieutenant Schmidt's Embankment, which for a long time was a port cargo area, was modernized in the years 1936-1937 and in 1956-1957. Now these sites not only reveal the beautiful historical views for the viewer, but also become an ornament of the Neva coasts. They are very popular and could be an example for modern urban planners.

Unfortunately, these lessons of the past have been ignored in the concept of the European Embankment - the largest and most expensive project of the beginning of the 2010s. A unique site in the heart of the city was given for construction. From this point, the northern shore of the Malaya Neva, you can enjoy a wonderful view of the Spit of the Vasilievsky Island, the Palace Embankment, the distant bridges. There was an opportunity to include this "postcard view" in the treasury of city panoramas. But it was not taken into account. The coastal zone was turned into a utilitarian passage for a fire engine, and not as an exclusive panoramic site. Judging by the draft, the houses will be very close to the water's edge, there will be no place for a promenade with a unique view of the historical center. The response to the unique features of the town-planning situation could be a gallery in the ground floor along the coast (in 1983-1986 such an idea was used on the shore of Smolenka), but the business plan does not allow this (Figure 2). The pedestrian route, laid at the bottom of the embankments, at the water's edge could open the potential of the northern shore of the Little Neva and waters in the area of the Peter and Paul Fortress [6]. The variant of the two-level embankment is quite widespread, and in St. Petersburg it was tested on the Vasilievsky Island, on the Lieutenant Schmidt embankment.



Figure 2. Pedestrian zones in the center of St. Petersburg, revealing its architectural and landscape potential: 1- Palace Square, 2- Peter and Paul Fortress, 3- the Split of Vasilievsky Island, 4- boulevard on Admiralteyskaya Embankment, 5- European Embankment, 6 - route of the proposed two-level quay.

The development of the potential of the historical heritage is also planned at the local level. The mastering of the Karpovka River embankment in the Petrogradsky district for general city purposes is very promising [4]. Not only the barracks of the Belozersky regiment, (architect L. Ruska, the beginning of the XIX century), but also the quay walls made of granite blocks have been preserved here. They can become the defining objects of the planned pedestrian zone. This material will allow to change the idea of the Petrograd side as a part of the city, where the urban environment of the eclectic and modern period dominates and to allocate interesting buildings.

Among the long-term tasks of a polemical character there is the possibility of re-profiling the pedestrian zone in front of the main facade of the Admiralty, where the Alexander Garden is now located. Authoritative art historians, who had occasion to see the building in all its glory, drew attention to the fact that the growing greenery of the garden did not just cut off the Admiralty facade from the city, but also led to the loss of a strategically important open space in the center of the city.

I.E. Grabar wrote: "Unfortunately, the whole area in front of the main facade of the Admiralty, which further strengthened the impression the author was counting on, is now turned into a garden. The space has disappeared, the beauty and impressiveness of the building have been lost" [7]. V.Y. Kurbatov, P.N. Stolpiansky, M.I. Roslavlev, and other specialists took a similar position [8-10]. For more than a hundred years there has been a dispute about the change in the landscape characteristics of the Alexander Garden. This dispute also concerns the main purpose of this pedestrian zone: is the recreational function sufficient or is this place of exceptional importance for revealing the architectural and artistic potential of a world-class facility?

3. Commercial potential of the urban environment

The experience of the operation of the first pedestrian zones connected with the realization of commercial goals, which were created in St. Petersburg two decades ago, revealed the essential role of the economic nuances of these projects. It is instructive to compare the full life of the pedestrian zone between the 6th and 7th lines of Vasilievsky Island with the empty Malaya Konyushennaya Street.

Despite the presence of interesting art objects and generally attractive architectural environment, there is no active pedestrian traffic on Malaya Konyushennaya street. The project of this pedestrian zone (architect F.K. Romanovsky, A.P. Chernov, V.A. Chepel) considered the street as part of a large public complex, as a way from Nevsky Prospect to the entertainment center, which was planned to be built on the site of a taxi park (Konyushennaya Square, 2). The key object of the complex - the entertainment center - has never appeared [11]. The function was unclaimed. There were few people on the street, and the empty space was gradually occupied by parked cars and the temporaries of summer cafes (Figure 3). Nowadays, twenty years later, there are more cafes and restaurants, and the street comes to life.

This example shows that temporary shopping and entertainment facilities - sales, thematic and festive fairs, skateboarding grounds, artificial ice rinks - can become objects of attraction.

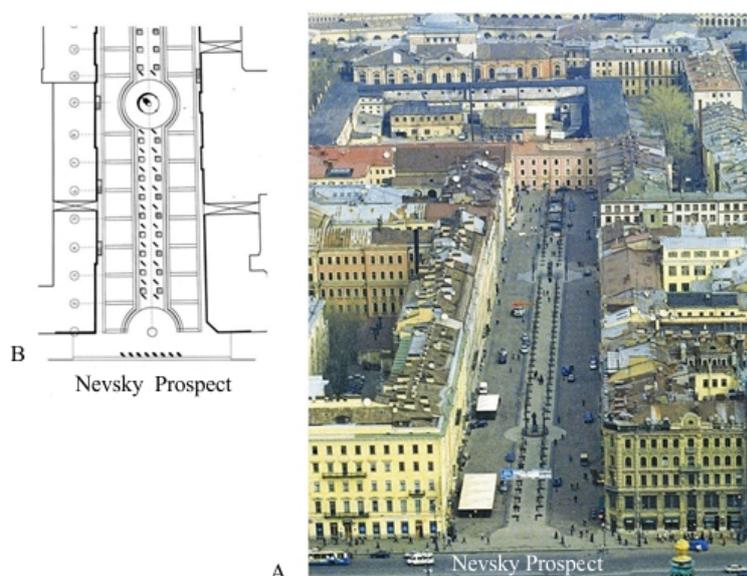


Figure 3. Malaya Konyushennaya street. A - general view (the letter T stands for the location of the supposed entertainment center), B - a fragment of the plan.

Pedestrian Andreevsky Boulevard between the 6th and 7th lines of Vasilievsky Island (Figure 4) was opened in 2002 on the section from Bolshoy to Middle avenue (architect A.A. Kazankov, Y.V. Sitnikov). It immediately became a place of active urban life. The way from the metro station to the Andreevsky market and two historical churches and the main street of the island turned out to be quite convenient. Here we can see a successful combination of many functions - the greenery and the discreet fountains of the boulevard favored the brief rest of the visitors of the numerous shops and

catering facilities. The front part of the building combines a variety of facades - from baroque to modernism of the 2000s.



Figure 4. Pedestrian Boulevard between the 6th and 7th lines of Vasilievsky Island.

4. Intra-quarter pedestrian zones - sanitary and hygienic qualities, recreational opportunities, commercial attractiveness

Prospects for the development of the pedestrian areas of the St. Petersburg city center are extremely important, since it is a territory of several thousand hectares with a population of about one million people. Residential areas of a very large area, in the construction of which two contrasting morphotypes are combined, are typical here. The facade adjacent to the "red lines" corresponds to the strict regular canons of the "imperial St. Petersburg". The development that has appeared behind this "shell" within the neighborhoods has a completely different nature. When it was created, architectural and artistic aspects did not play a significant role in the creative process, so here in a vast territory in a chaotic sequence, a variety of open, closed and semi-closed spaces alternate in shape. The contrast of morphotypes reveals the reverse side of the "open-air species" of Petersburg and represents the multifaceted image of the city. B.M. Kirikov, who notes the uniqueness of the residential environment of the St. Petersburg neighborhoods, believes that in the process of profitable house-building "a spontaneous autogenesis of a new structural form took place... This purely spontaneous architecture - or antiarchitecture - seems to be a city phantasmagoria, striking with a harsh mysterious expressiveness" [12].

The heterogeneity of the development was especially obvious in large blocks: "In large blocks of a complex configuration, buildings often did not reach the core, and over time, unoccupied spaces were plunged into desolation and later degraded [13]. In the context of the apartment market, it affects the prospects for renovation of the sites in the center of the blocks. The cost of apartments in houses on the "first line", with facades along the streets and embankments is prohibitive, and housing, located in the neighborhood, but inside the neighborhoods, in the "wings", as realtors report, is practically not interested buyers [14]. In 2011, the administration noted that "good apartments in the center have long been settled, there are communal apartments in the second-third courtyards, but no one settles them" [15]. The reduced cost of housing in the heart of large blocks reveals the possibility of forming here public pedestrian zones.

Constant aggravation of the ecological situation, increase of the level of gas contamination and noise on the city highways is an encouraging stimulus. Pedestrians staying in unfavorable and deteriorating sanitary and hygienic conditions is becoming increasingly problematic, and the transfer of pedestrian routes to more prosperous intra-quarter territories is increasingly relevant. The idea of dividing the transport mains and the pedestrian network, known in world town planning from the 1930s-1950s, was spontaneously embodied in the system of Leningrad "walk-through yards", built through quarters in the 1950s-1960s. Without the participation of the administration and urban planners, a well-developed network of quiet pedestrian routes, isolated from the street from noise and gas contamination, formed in the centre of the city. However, the use of residential dwellings by a

mass of citizens for unlimited transit leads to undesirable conflicts with residents of adjacent buildings. An alternative option [16] allows to reduce possible complications (Figure 5).



Figure 5. Development of intra-quarter pedestrian zones: a - Chandigarh (India), 1950s, b-variant of the development of the quarters of Vasilievsky Island, St. Petersburg.

It is suggested to use areas of a depressive nature that do not have commercial attractiveness - dark, unventilated yards with adjacent apartments deprived of sun. In the Soviet era, this residential environment was viewed as a sad legacy of capitalist profitable construction and emphasized its inconsistency with the unified standards of sanitary and hygienic standards. It can be assumed that their use for public purposes can help to avoid conflicts that arise when referring to comfortable "first-line" yards and attract investors. These plots are not suitable for keeping a dwelling in them, but they can be used to accommodate communal or retail facilities, offices or communication centers. The contact of transit routes and objects of the service system makes it possible to count on the commercial attractiveness of such a solution due to the implementation of the "passing" principle. Figure 5, b shows a schematic diagram of the redevelopment of a group of quarters of the Vasilievsky Island. Pedestrian areas are formed from non-residential buildings and open areas of the central zone and are isolated from residential yards. These intra-quarter "passages" are connected to each other and form a network of pedestrian routes isolated from city streets.

5. Conclusions

1. The current state of the pedestrian areas of St. Petersburg does not meet the conditions of its urban development.
2. The formation of those pedestrian zones that reveal the unique architectural and landscape potential of the city can have the greatest efficiency.
3. The development of a network of pedestrian intra-quarter zones in the residential area of the center should be considered an important and large-scale task of the long-term perspective.

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